Michael E. Cohen
Residents Research Day

State University of New York at Buffalo,
Department of Neurology,
School of Medicine and Biomedical Sciences

2014
Friday, June 13th, 2014
11:00 am—3:30 pm
Cummings Conference Center
Welcome from Department Chair:
Gil I. Wolfe, M.D., FAAN

Introduction:
Robert Zivadinov, M.D., PhD., FAAN & Nicholas J. Silvestri, M.D.

Welcome/Introduction
11:00 am  Gil I. Wolfe, M.D., FAAN
Robert Zivadinov, MD, PhD, FAAN
Nicholas J. Silvestri, M.D.

Presentation Session # 1
11:10 am  Cynthia Shin Beatty, MD
11:30 am  Supriya Kohli, MD
11:50 am  Ahmad Abokhamis, MD
12:10 pm  Mahmoud Al Masry, MD
12:30 pm  Break/Lunch

Presentation Session # 2
1:00 pm  Rajesh Gupta, MBBS
1:20 pm  Naeem Mahfooz, MD
1:40 pm  Deeya Gaindh, MD
2:00 pm  Muhammad Masud, MD
2:20 pm  Break/Photo Session

Presentation Session # 3
2:30 pm  Ghasan Ahmad, MD
2:50 pm  Karanbir Singh, M.D.
3:10 pm  Noureldin Abdelhamid, MD
3:30 p.m.  Pooja Sofat, MBBS
Research day in the Department of Neurology is always auspicious, for the residents and faculty alike. It is a time to reflect on the years spent at this University and the influence that your peers and the faculty have had on your development as sophisticated physicians.

Each year at this time, it is imperative to reflect on how the 3-4 years of training has changed the individual from an insecure physician to one who has become confident and expert in their chosen field. Every year since 1984, the senior residents have been asked to present a research paper to the faculty, representing either clinical or basic research. With each passing year, the quality of the presentations has improved. Faculty and residents alike increasingly have recognized the value of this activity. Not surprising, many of the papers have resulted in publication in well-regarded, peer-reviewed neurology journals.

As the seniors move on, we will miss their presence and contributions to the life of the department. Hopefully, you carry with you memories not only of the good, the bad and the ugly but also an appreciation of how these years have challenged you, changed you and contributed to your intellectual growth. Your performance today attests to this statement. Good luck. Do not forget us and stay in touch.

Michael E. Cohen, MD, FAAN, FANA, is a Professor of Pediatrics and Neurology. Dr. Cohen was chair of the UB Neurology Department from 1983-2000. He is a past President of the Child Neurology Society, The Association of Child neurology Professors and past President of the Section of Child Neurology of the American Academy of Neurology. He has been responsible for several of the all-day child neurology courses given at the annual meeting of the academy. He was a member of the organizing committee of the ABPN for neurodevelopmental neurology and has served on the writing committee for recertification for child neurology of the ABPN. His research interests have been primarily in neuro-oncology.

Our research day represents the culmination of months and even years of meticulous work by our neurology trainees. This work is now subjected to peer scrutiny and competition for awards.

Moreover, the research day recognizes the involvement of our faculty and fellows in the mentorship of residents. Experience and lessons learned are passed from each generation of physician researchers to the next in just this way.

Through the years, graduates of our program have repeatedly confirmed the invaluable experience of their participation in the Research Day. Their comments express an increased appreciation not only for the clinical research process itself but also for the positive impact it will always have on their clinical careers.

Today’s presentations continue an established tradition of academic excellence. Please join the entire UB Department of Neurology in commending each resident and fellow for the innovation, scope and execution of their projects. On display are analytical skills, judgment and integrity. Please also accept my sincere appreciation to all of you for contributing to and sharing the day’s events.

Best wishes to all of you!
Dr. Wolfe
This is the eleventh year of our expanded Resident Research Training Program and the scope as well as range of the projects presented today undoubtedly display resourcefulness, determination, commitment and knowledge.

Whether our presenters’ vocation leads them towards clinical work or further research, they are all true intellectuals, having shown the judgment, perception and motivation that will guide them proficiently in years to come. I commend each and every one of them for a job marvelously done.

It has been my primary purpose in these last few years to promote as well as facilitate such a development in project diversity. As you see in our program today, although we continue to encourage study in the fields of our core and strength areas—multiple sclerosis and stroke—we have also increased the number of projects that explore other neurological disorders and diseases.

With these additional advancements, we hope to “pave the way” to the next level of research distinction. Projects that are progressively far-reaching and innovative will considerably advance the careers of our new physicians as well as enhance both the importance and notoriety of our Neurology Residency Program. What a magnificent endeavor to be a part of!

It gives me great pleasure to see another class of residents graduate from our training program. Over the past three years, we have watched these individuals grow into outstanding clinicians and scientists. I am certain that they will make us proud. As the end of another academic year approaches, I am inspired by the enthusiasm and fortitude of our trainees and am committed to making this program one of the best around. I would like to thank all of our residents for their hard work and dedication. I would also like to thank the faculty for their devotion to teaching and their support of the training program. Finally, I would like to acknowledge the outstanding efforts of Ms. Eva Tamoga and Mr. Caleb Clark, who work tirelessly in support of the program.

A native of Kenmore, New York, Dr. Silvestri earned his MD from SUNY at Buffalo School of Medicine before completing his internship in internal medicine, residency in neurology and fellowship in neuromuscular medicine at Harvard Medical School/Beth Israel Deaconess Medical Center in Boston, Massachusetts. He joined the faculty in the Department of Neurology at SUNY Buffalo School of Medicine in 2009 and has served as Program Director of the Adult Neurology Residency since 2011. Dr. Silvestri is a member of the University at Buffalo Faculty Senate, the Graduate Medical Education Committee and is the Chair of the Program Director Advisory Committee.
**Assessing long-term functional outcomes in children with Acute Disseminated Encephalomyelitis**

CS Beatty, A Drake, D Ramasamy, K Kavak, J Hagemeier, J Parrish, R Zivadinov & B Weinstock-Guttman, MD

Department of Pediatric Neurology at Women and Children’s Hospital

Department of Neurology, Jacobs Neurological Institute, University at Buffalo, Buffalo, NY, USA

Dr. Cynthia Beatty is currently a PGY5 Resident in the pediatric neurology program of SUNY at Buffalo. She was born and raised in Buffalo, New York. After attending Hamilton College in upstate New York, she spent a year working as a teaching assistant at Buffalo’s Aspire Children’s Discovery Corner where she developed an interest in developmentally disabled children. She then received her medical degree at Poznan University of Medical Sciences in Poland. After completing residency, she will join the Pediatric Neurology Department at SUNY Buffalo as a clinical assistant professor of neurology. For this study, Cynthia has obtained proper IRB approval from UB.

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**Background:** Pediatric Acute Disseminated Encephalomyelitis (ADEM) is an inflammatory CNS demyelinating disease with over 70% of patients experiencing a full clinical recovery. While previous research focused on speed of recovery and rates of relapses, there is insufficient data on how these patients do long term with regards to behavioral and neuropsychological function and whether residual MRI abnormalities correlate with neuropsychiatric deficits.

**Objectives:** 1. Assess long-term (>2 years) functional outcomes in a pediatric ADEM cohort. 2. Identify predictors for poor outcome in children. 3. To access whether MRI changes correlate with functional outcomes.

**Methods:** This is a retrospective chart review of 37 pediatric patients diagnosed with ADEM. Cognition, neurological deficits, age, duration of illness, and speed of recovery were included. Neuropsychological measures and MRI scans were analyzed as a function of long-term outcome.

**Results:** About 96% experienced full recovery. Motor impairment (48.6%) was the most common symptom. Residual neuropsychiatric deficits (aggression, irritability, depression, anxiety) were commonly reported. Nearly 80% continued to receive some form of intervention. Anxiety (p = 0.008) and depression (0.094) were correlated with larger T2 lesion volume at baseline. There were significant improvements in T2 lesion volume (p = 0.050) and EDSS (p = 0.0010) at the end of follow-up. Younger age of onset correlated with worsening scores in social functioning (p = 0.027) and school functioning (p = 0.027). Younger age of onset (p = 0.015), longer duration of illness (p = 0.053), slower speed of recovery (p = 0.049), and seizures (p = 0.05) correlated with lower vocabulary scores. Mean IQ score within subset of 13 patients was 93.8 (SD = 21.7).

**Conclusion:** Our study shows that though patients with ADEM showed an overall improvement in the degree of physical recovery and MRI metrics, behavioral and cognitive deficits may persist. Younger age of onset and larger T2 lesion volume at baseline are associated with increased neurocognitive dysfunction at follow-up. Further studies of larger, long-term follow-up studies are warranted to address important outcome prediction.

**Disclosures:**

Allison Drake, Deepa Ramasamy, Katelyn Kavak and Jesper Hagemeier have nothing to disclose. Drs. Cynthia Beatty and Joy Parrish have nothing to disclose. Dr. Bianca Weinstock-Guttman has received compensation for consulting, speaking and serving on a scientific advisory board for Biogen & Idec, Teva Neuroscience and EMD Serono. She also received financial support for research activities from the NMSS, NIH, ITN, Teva Neuroscience, Biogen Idec, EMD Serono and Aspreva. Dr. Robert Zivadinov has received compensation from Biogen & Idec for speaking fees. He received financial support for research activities from Biogen Idec, Teva Neuroscience, EMD Serono and Wilson Greatbatch. There are no conflicts of interest as this is a non-funded study.
“IV Lacosamide as an adjunct in treatment of status epilepticus.”

Department of Neurology, Jacobs Neurological Institute, University at Buffalo, Buffalo, NY, USA.

Supriya Kohli, MD, Ping Li, MD, Katelyn Kavak, MS, Barbara Teter, Ph.D., Arie Weinstock, MD.

Background:
Status epilepticus (SE) is among the most common neurologic emergencies, with a mortality rate of up to 20%. Once the first and second line treatment has failed SE is considered refractory (RSE). Lacosamide (LCM) as a new antiepileptic drug (AED) has been available as an intravenous (IV) solution since 2009 and is often used as adjunctive treatment in RSE.

Objective:
This study aims to assess the efficacy of IV LCM in RSE.

Method:
This was a retrospective chart review study. We included 40 patients with RSE between August 2009 - June 2013 who were treated with IV LCM at Buffalo General and Millard Fillmore Gates Hospital. A control group consisted of patients with RSE that did not receive LCM. Patients who were on LCM as an outpatient and with etiology of cardiac arrest were excluded from the study. Efficacy was defined as cessation of seizures after starting IV LCM with no need for another AED or Pentobarbital. The duration of intubation and hospital stay in each group was also calculated. Statistics were analyzed using SPSS 21 and chi-square / t tests.

Results:
Of the 40 patients included in the study, 25 were treated with LCM and 15 were treated with other AEDs. For both groups, the average age was 64.5 (SD=13.5) and 60% were female. The most common etiology in all patients (45%) was intracranial bleed. Nineteen out of 25 patients (76%) used LCM as their last medication without the need of Pentobarbital. Furthermore, 21 out of the 25 LCM users (84%) had their seizures resolved, compared to 60% of other medication users (p=.090). The mean duration of intubation in the study group was 10.3 versus 11.3 in control group and the mean hospital stay in study group was 20.5 versus 22.5 days in control group (not statistically significant).

Conclusion:
Based on the study we noted that there was a trend towards a better outcome for patients who received LCM in RSE. We believe that LCM can be an effective add on treatment and should be considered early on management of RSE.

Disclosures/Conflicts of Interest:
1) Dr. Supriya Kohli has no disclosures and no conflicts of interest.
2) Dr. Arie Weinstock belongs to the “speaker bureau” of Supernus, cybertronics and Sunovion but none of these are linked to this project: there are no conflicts of interest.
3) Dr Ping Li has nothing to disclose nor any conflicts of interest related to this study.
4) Dr Barbara Teter has received research support from Biogen Idec, Serono, Genzyme, Teva and Novartis but nothing related to this project and has no conflicts of interest.
5) Katelyn Kavak - no disclosures or conflicts of interest.
“Studying the association between vitamin D serum level with disease progression and survival in ALS patients on vitamin D oral supplements.”

Department of Neurology, Jacob Neurological Institute, University at Buffalo, Buffalo, NY, USA

Ahmad Abokhamis, M.D.
Nicholas Silvestri, M.D.

Background:
Amyotrophic lateral sclerosis (ALS) is an inevitably fatal neurodegenerative motor neuron disease with a median survival of 3 years. Accumulating data suggests slower disease progression yet less functional capacity in transgenic mice with low serum vitamin D levels. However this relationship in humans is yet to be established. The purpose of this study is to evaluate whether serum vitamin D levels have any effect on ALS progression or survival.

Methods:
Retrospectively the charts of 51 ALS patients on vitamin D supplements were reviewed. The change in MRCsum scores over 1-2 years were studied along with survival in years in comparison to vitamin D random serum levels checked during the disease period.

Results:
51 ALS patients on vitamin D oral supplement were assigned into 2 groups: Vitamin D deficient patients despite oral supplement defined by serum vitamin D levels less than 30 ng/ml and patients with normal to high serum vitamin D levels defined by serum vitamin D levels equal or more than 30 ng/ml.

Patients on oral vitamin D supplement with serum vitamin D levels had less of a decline in their MRCsum scores at one and two year intervals (4.2-7.4) compared to the patients on oral vitamin D supplements with normal to high serum vitamin D levels (8.5-14.6) (P-value<0.001). Survival between the two groups was not significantly different (P-value: 0.684).

Conclusion:
Treating vitamin D deficiency in ALS patients to a serum level equal or higher than 30 ng/ml accelerated the decline in the total MRCsum scores in one a two year intervals without significantly affecting the survival. Trials are suggested to redefine the targeted serum vitamin D levels in ALS patients and shed light further on the role of vitamin D in ALS etiology.

Conflict of Interests: Dr. Abokhamas has no conflict of interests. Dr. Nicholas Silvestri has received honoraria from Walgreens as well as compensation for consultation services.

Disclosures: Neither Ahmad Abokhamis, M.D. nor Katelyn Kavak, M.S. have anything to disclose. Neither Dr. Silvestri nor Dr. Barbara Teter have anything to disclose relevant to this study. This is a non-sponsored research study.

Dr. Abokhamis has obtained the proper IRB approval from the VA for this study.

Dr. Abokhamis was born in Damascus, Syria on May 9th, 1985 and graduated from Damascus University with a Faculty of Medicine in February of 2009. Between August 2008 and January, 2009, Ahmad did elective rotations in The Baylor College of Medicine and The University of Texas—Houston. Dr. Abokhamis completed an internship at UB from 2010-2011 and then started his neurology residency training. Dr. Abokhamis has pursued a neurophysiology fellowship training position at The University at Buffalo. Ahmad has also participated in sleep medicine research projects at The University of Texas at Houston. Dr. Abokhamis is married and has a 21-month old baby girl. His hobbies include soccer, jogging and watching television.
Mahmoud Al Masry is a PGY4 Neurology Resident at The University at Buffalo. He completed his medical school training at Damascus University located in Syria in 2009. Dr. Al Masry joined UB Neurology in 2010 where he finished his medicine internship year before starting his neurology residency. Mahmoud is joining the Neuro-imaging fellowship program at The Dent Neurologic Institute. He has an interest in neuro-imaging and its application in Vascular Neurology. He conducted a verbal presentation for a “CASIAS study” abstract at the international stroke conference in Hawaii in 2013.

**Background and Purpose:**
Knowledge exists regarding which factors are associated with clinical improvement, and which factors may entail a negative clinical development in patients who received intravenous Alteplase for acute ischemic stroke. However, data regarding differences between patients who revascularize and those who do not after thrombolytic treatment are still incomplete.

**Methods:**
We retrospectively reviewed the data of all patients who received IV alteplase (TPA) at Gates Vascular Institute between 2009 and 2013. Ninety eight (98) patients met our inclusion and exclusion criteria. Thrombolysis In Cerebral Ischemia (TICI) score and Arterial Occlusion Lesion (AOL) revascularization score were used to assess vascularization status in post TPA vascular studies (Angiography and CTA respectively). Patients were categorized according to revascularization status into 2 groups: Good revascularization group (TICI 2b and 3 or AOL 2 and 3) and Poor revascularization group (TICI < 2b or AOL 0-1). Demographics, risk factors, clinical features, radiologic data and outcomes were collected by standardized procedures.

**Results:**
Good revascularization was achieved in 41 of the 98 patients (41.7%). There was significant differences between the two study groups in Clot length (P<0.0001) location of occlusion (P<0.001) and NIHSS score at presentation (P = 0.03). There is a trend for better revascularization in patients with atrial fibrillation (P= 0.085). In Logistic regression model, Clot length<8 (P<0.0001), occlusion beyond proximal M1 (P<0.0001) and NIHSS <14 (P = 0.004) independently predicted good revascularization after IV TPA.

**Conclusion:**
Clot length, location of arterial occlusion and NIHSS score at presentation can help in predicting revascularization status after IV Alteplase treatment for acute ischemic stroke patients. These data can help in triaging patients to the best revascularization method and in better knowledge of which patients should be targeted for interventional treatment.

**Disclosures and Conflicts of Interest:**
Dr. Mahmoud Al Masry has an affiliation with University at Buffalo. He has nothing to disclose. Dr. Ghasan Ahmad has an affiliation with University at Buffalo. He has nothing to disclose. Katelyn Kavak, M.S. has an affiliation with University at Buffalo. She has nothing to disclose. Dr. Sandya Mahla has an affiliation with University at Buffalo. She has nothing to disclose. None of the authors have any conflicts of interest related to this study. Payman Shirani has an affiliation with University at Buffalo. He has nothing to disclose.
Determining the yield of electrodiagnostic (EDX) studies in patients referred for neck and/or upper extremity pain.

Rajesh K. Gupta¹, Nicholas J. Silvestri¹

¹Department of Neurology, University at Buffalo, State University of New York, Buffalo, NY, USA

Introduction: Neck and upper extremity pain can be caused by numerous processes including cervical radiculopathy (CR), brachial plexopathy, entrapment neuropathies etc. There are no studies in literature that address the yield of EDX studies in patients referred for neck and/or upper extremity pain.

Objectives: To determine the yield of EDX in patients referred for neck and/or upper extremity pain and classify the final diagnoses in various groups based on electrodiagnostic studies.

Method and statistical analysis: This was a retrospective chart review of EDX studies done at VAMC and UBMD neurology to evaluate for CR in patients with neck and/or upper extremity pain. After IRB approval, we reviewed EDX reports of 1925 patients from 01/01/2002 to 12/31/2012 who were assigned ICD codes for cervical radiculopathy and had both EMG and NCS. We found total 660 patients at both UB neurology at Essjay road (38) and VAMC (622) eligible to include in the study. Data were collected for patients’ age, gender, symptoms, history of trauma (if available), major neurological findings, specialty of electromyographer, nerve conductions studies (NCS), EMG and MRI abnormalities (if available). “Chi” square and “t” test were used for as needed through SPSS.

Results: We found that 68.8% of the patients had CR in EDX group among total referral for neck and/or upper extremity pain at both study centers during above study period. The yield at UBMD neurology (18.4%) was less compared to yield at VAMC (71.9%). Physiatrists reported radiculopathy in 74.9% of EMG studies compared to 51.5% reports by neurologists. Radicular pain and definitive neurological findings of radiculopathy were present in 54.7% and 35.2% respectively in the CR group, and were more common this group.

Conclusion: There was significant difference between yields at VAMC and UB neurology centers. We found significant operator variability between neurologist and physiatrist. We believe this study helps us to better understand role of neurological exam, EDX and MRIs in cervical radiculopathy that can impact referral for cervical laminectomy procedures.

Disclosures: Dr. Nicholas Silvestri has served as an advisor for Biogen and Walgreens. Dr. Murali Ramanathan serves as an editor for the American Association of Pharmaceutical Scientists journal; receives royalties for publishing The Pharmacy Calculations Workbook (Pinnacle, Summit and Zenith, 2008); and receives research support from EMD Serono, Novartis, Pfizer, the National Multiple Sclerosis Society and the National Science Foundation. He has served as a consultant for Biogen Idec, Allergan and Netezza. None of the above will pose to be a conflict of interest for this study as this project is currently non-sponsored.

Conflicts of Interest: Dr. Gupta has no conflicts of interest. Dr. Nicholas Silvestri has no conflicts of interest. Dr. Murali Ramanathan has no conflicts of interest.

Dr. Gupta also obtained proper IRB approval from UB’s internal review board.

Dr. Rajesh Gupta is a PGY-4 Neurology resident and the chief resident who completed his medical school training at Sawai Man Singh Medical College in India. Thereafter, he went on to pursue doctorate training in pharmacology at the University of Delhi and Masters in clinical research at Rush University, Chicago. He completed his Internship at SUNY Buffalo and is currently a final year resident. Raj is going to pursue a advanced general neurology fellowship in neuro-immunological and neuro-infectious disorders at Massachusetts General Hospital followed by a Neurophysiology fellowship at Lahey Clinic & Boston Children’s Hospital. His wife is a dentist and is pursuing advance training. He is also blessed with a year old daughter named ‘Kira’.

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“The Prevalence of Breakthrough Seizures in Pediatric Patients on Multiple Anti-Epileptic Drugs”

Department of Pediatric Neurology,
The State University of New York at Buffalo;
School of Medicine and Biomedical Sciences, USA

Naeem Mahfooz, MD, Osman Farooq, MD. Ghulam Mustafa, MBBS. Muhammad W. Masud, MBBS. Supriya Kohli, MBBS. Thomas Langan, MD.

Dr. Mahfooz graduated in 2006 from King Edward Medical College in Pakistan. He did his a pediatric internship and residency from The State University of New York at Buffalo (SUNY Buffalo). Presently, he is doing his pediatric neurology residency at SUNY Buffalo. After this academic year, Dr. Mahfooz will complete a fellowship in Pediatric Epilepsy at The Cleveland Clinic in Ohio starting in July of 2015.

He is presently involved in multiple research projects. Naeem’s areas of interest include Multiple sclerosis, Pediatric Epilepsy, Myelination Patterns and epilepsy surgery. His future goal is to become an academic Pediatric Epileptologist.

Background/Introduction: A breakthrough seizure is an epileptic seizure that occurs despite the use of anti-epileptic drugs (AED) that have otherwise successfully prevented seizures in patients. They Account for frequent pediatric emergency department (ED) visits and their rate varies from 11-37%. Breakthrough seizures may be more dangerous that non-breakthrough seizures because they may be less expected by the patient who may have already considered themselves free from seizures and therefore not take any precautions.

Purpose: Our goal is to describe the prevalence of breakthrough seizures in the pediatric population who are on single versus multiple AEDs.

Methods: A retrospective review of charts of children with breakthrough seizures on AED was performed. Patient identification was done using ICD-9 billing codes for breakthrough seizures. Patients were further classified according to age, gender, race, type of seizure and concurrent neurologic impairment. Data was also classified into febrile vs non-febrile seizures and breakthrough seizure on single vs. multiple AEDs.

Results: 6,413 patients presented to WCHOB with seizures from January 2010 to January 2012. Further classification was based on age and presentation to ED yielding 1,160 visits. These were further subdivided based on febrile (598) vs non-febrile (562) seizures. 83.27% simple febrile seizures were under 3 year of age while non-febrile seizures had no specific age distribution. 12.26% patients had recurrent simple febrile seizures. The recurrence of febrile seizures was found to be 12.24% while of non-febrile seizure was 19.41%. Among the breakthrough seizure group, patients with preexisting neurological complications had more ED visits for seizures than with no preexisting condition, p-value 0.05 (CI: 1.315-1.729 vs 0.958-1.498). 72.22% of patients had neuroimaging done. EEG was done in 74.5% and found to be abnormal in 51.94% patients. Pearson correlation between patients on single vs multiple AEDs did not show a significant difference in the number of ED visits if the patients were on more AEDs, but did show that more ER visits may lead to being placed on multiple AEDs.

Conclusion: Patients with pre-existing neurological conditions have more recurrent ED visits related to seizures than those without a preexisting neurological condition. A higher rate of seizure related ED visits may lead to being placed on multiple AEDs. Treatment with multiple AEDs was found to be insignificant in reducing the number of ED visits. Therefore, with refractory epilepsy (continued breakthrough seizures while on ≥ 2 AEDs) non pharmacologic treatment methods (epilepsy surgery, vagal nerve stimulator and ketogenic diet) can be considered.

Neither Naeem Mahfooz nor Dr. Thomas Langan have any conflicts of interest. Neither one of them have anything to disclose related to this study. None of the other authors have any conflicts of interest to declare or disclosures to make regarding this study. Dr. Mahfooz has obtained proper IRB approval from UB’s review board.
“Multiple Sclerosis and Cancer”

Deeya Gaindh, M.D.— PGY3

Principle Investigator and mentor:
Dr. Bianca Weinstock-Guttman
Co-investigators: Dr. Barbara Teter, Katelyn Kavak, MS

Department of Neurology, State University of New York at Buffalo, School of Medicine and Biomedical Sciences; Buffalo, New York, USA

Deeya spent the majority of her childhood in Maine, where her family still resides. She completed her undergraduate education at Bowdoin College in Brunswick, Maine as a Sarah and James Bowdoin Scholar. After college, Deeya spent one year at the National Institutes of Health in Bethesda, Maryland investigating disease modifying therapies in Multiple Sclerosis using neuro-imaging. She attended Saint George’s University School of Medicine and lived in Grenada and New York City. Dr. Gaindh is currently a PGY-3 adult neurology resident at The University of Buffalo where she developed a special interest in the field of Neuro-Oncology. She has accepted an offer for fellowship in Neuro-Oncology at Memorial Sloan Kettering Cancer Center.

Background:

Few studies have studied whether multiple sclerosis (MS) alters the risk of cancer, with varying results. Previous studies suggest that the use of disease modifying therapy (DMT) does not increase risk of cancer, however these studies did not investigate the use of long term DMT use and subsequent cancer risk.

Purpose:

The current study aims to assess the prevalence of cancer in MS patients compared to the New York State. We will compare cancer prevalence in patients on DMT versus no DMT. We will also investigate family history of cancer in Multiple Sclerosis patients to determine prevalence of cancer in first degree relatives which will be compared to the numbers for New York State. This will enable us to determine whether patients with a family history of cancer have a greater risk of cancer.

Methods:

Subjects with multiple sclerosis will be selected from New York State Multiple Sclerosis Consortium (NYSMSC) and compared to New York State by using New York State Department of Health Cancer Registry. Subjects who are on DMT will be compared to those who are DMT naïve with regards to cancer prevalence using a chi-square test and a logistic regression will be used to control for the effects of age. Family history of cancer will be determined by looking at prevalence of cancer in first degree family members of MS patients. These subjects will be compared to MS subjects without a family history of cancer using the aforementioned statistical methods to determine if patients with a family history of cancer have a higher incidence of cancer.

Expected results:

Use of disease modifying therapy may alter the immune system and cause a higher risk of cancer compared to patients not on disease modifying therapy. We expect to see that family history of cancer in patients with multiple sclerosis is higher than the general population.

Disclosures and Conflict of Interests:

Deeya Gaindh, M.D. has nothing to disclose nor any conflicts of interest.
Katelyn Kavak, M.S. has nothing to disclose nor any conflicts of interest.
Barbara Teter, Ph.D. has nothing to disclose nor any conflicts of interest that relate to this study.

Dr. Bianca Weinstock-Guttman has participated in speaker’s bureaus and served as a consultant for Biogen Idec, Teva Neurosciences, BMD Serono, Pfizer, Novartis, Genzyme, and Acorda. She also has received grant/research support from the agencies listed above as well as ITN, Questcor and Shire. No other industry financial relationships exist.

Proper IRB approval was obtained from UB’s internal review board.
“Predicting immediate response to IV r-TPA in acute stroke patients undergoing IV thrombolysis and endovascular treatment.”

Muhammad W. Masud, M.D. – PGY3 and Marilou Ching, M.D.

State University of New York at Buffalo; School of Medicine and Biomedical Sciences, Department of Neurology

Dr. Masud is a PGY3 Neurology resident who earned his medical degree from King Edward Medical University in Lahore, Pakistan. After graduation, he spent one year doing basic science research at Johns Hopkins University and then moved to Buffalo to work with the MS research team at The Jacobs Neurologic Institute. He has authored and co-authored multiple research papers. Dr. Masud also completed one year of internal medicine at UB and continues his training in Neurology. His research interests include Multiple Sclerosis and cerebrovascular diseases and has published in both disciplines.

Introduction/Background:
Stroke is a devastating disease and currently the fourth leading cause of death in this country. Thrombolysis using intravenous recombinant tissue plasminogen activator (IV r-TPA) is the current gold standard for the treatment of acute ischemic stroke. After successful arterial early revascularization with TPA therapy, lack of early clinical changes or worsening is relatively common (37%) and appears to be independent of time to TPA bolus or reperfusion[2]. The patients who receive IV TPA and then qualify for endovascular intervention due to lack in clinical improvement immediately following IV TPA, may still be responders to IV TPA and it might be just a matter of time before recanalization can be achieved.

Objectives and Hypothesis:
The objective of the study would be to isolate the patients in whom we can predict a good immediate response to IV TPA (complete or partial recanalization) and also identify the patients who are less likely to recanalize (non-responders). We intend to investigate factors that can predict the immediate response to IV TPA.

Material and Methods:
This will be a retrospective chart review of the patients who presented to BGMC and Gates Vascular Institute between 2008 and 2013 with diagnosis of an acute stroke and received IV TPA and then underwent endovascular intervention. We will collect the demographic information including age, race, sex, NIHSS at presentation, history of diabetes, HTN, atrial fibrillation, use of antiplatelets and statins before presentation, baseline creatinine, baseline albumin, anterior vs posterior circulation stroke, embolic stroke vs in situ thrombosis. We will then look into the CTA at the time of presentations and look at the clot location, calculate clot burden score, record the time of CTA, time of administration of IV TPA and time of 1st conventional angiographic run and will look at the clot location in the 1st run of the conventional angiogram. We will calculate the time lapse between initial CTA, time of IV TPA bolus and time of angiogram. We will then divide the patient population into 3 groups based on the changes in clot location.

Group 1: Complete responders: Patients who had complete recanalization and clot dissolved completely.
Group 2: Partial responders: Patients who had partial recanalization and clot either moved to a distal location or partially dissolved.
Group 3: Non- Responders: Patient in whom the clot location/size did not change.

Data will be statistically analyzed to find a correlation between the above mentioned groups and multiple variables to identify statistically significant factors that predict response to IV TPA.

Conclusion:
After statistical analysis, we will be able to identify the factors that can predict immediate response to IV TPA.

Neither Dr. Muhammad Masud nor Dr. Marilou Ching have any conflicts of interest or any disclosures related to this study. IRB approval is pending.
“Factors influencing delay in epilepsy Surgery: A retrospective data review.”

PI: Ghasan Ahmad, M.D.
Research Mentor: Ping Li, M.D. and Naveed Chaudhry, Medical Student

State University of New York at Buffalo;
School of Medicine and Biomedical Sciences,
Department of Neurology

Dr. Ahmad earned his medical degree at King Edward Medical University Pakistan after which he continued to do a year of internship at Mayo Hospital Lahore. After the internship, Dr. Ahmad joined The University at Buffalo and completed one year of Internal Medicine training and is currently in his third year of Neurology training. Dr. Ahmad’s primary research interest lies in cerebrovascular diseases and epilepsy and has published in peer reviewed journals of both areas of neurology. He has excellent bedside manners and is a member of gold humanism honor society.

Introduction:

Medically intractable epilepsy affects one third of the patients with seizures for which surgery is considered the standard of care. Several factors have been suggested for the reasons of the delays in epilepsy surgery. Nationally, the biggest reason seems to be lack of insurance of the patients.

Objectives/Hypothesis:

Studies done have been in the tertiary centers in different states of the country representing data of the respective areas. We intend to study the population of the western New York. Our hypothesis suggests that lack of insurance would not be a major contributor in our tertiary center as New York Medicaid Eligibility is considered favorable for patients amongst most states.

Methods:

A retrospective chart review of the patients will be performed on the patients diagnosed with medically refractory epilepsy and had been referred for epilepsy surgery. Data such age, gender, ethnicity, insurance information, their zip codes, level of education of decision maker along with time of diagnosis to time of surgery, disease severity will be assessed. Time between diagnosis to medical intractability, to the referral and time to the surgery will be measured. Different variables will be analyzed and compared in order to assess the major contributing factor.

Expected Results:

We expect that insurance is not a major contributor of delays in epilepsy surgery in the western New York.

Disclosures & Conflicts of Interest:

Neither Dr. Ghasan Ahmad nor Dr. Ping Li have anything to disclose or any conflicts of interest. This is a non-sponsored study. IRB approval is pending.
"Safety of intravenous thrombolysis for ischemic stroke in patients with intracranial neoplasms, cerebral aneurysms and arteriovenous malformations."

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Karan was born and raised in India. He went to medical school at Government Medical College, Amritsar, India. Upon completion of medical school, he was matched into Neurology Residency at SUNY Buffalo. He met his wife during the preliminary Internal Medicine year and has been happily married for a year and a half and is soon to be a father. Dr. Singh is currently a PGY-3 adult neurology resident. He has a special interest in Neuroimaging and is considering to pursue a fellowship.

Introduction:
Stroke is the fourth leading cause of mortality in the United States. Intravenous tissue-type plasminogen activator (rtPA) is the only FDA approved pharmacological therapy for acute ischemic stroke. Known intracranial neoplasms, cerebral aneurysms and arteriovenous malformations (AVM’s) are among the contraindications to intravenous rtPA. This is due to a theoretical increase in risk of hemorrhage with these conditions, although the actual risk is unknown. We plan to determine the safety of intravenous rtPA in this group of patients through a retrospective hospital based study along with review of previous literature.

Objectives:
We propose that small cerebral aneurysms and benign intracranial neoplasms may not increase the risk of hemorrhage after intravenous rtPA. Their listing in exclusion criteria for rtPA should be reconsidered to assure appropriate use of intravenous rtPA. We plan to look into the outcomes of patients who were administered intravenous rtPA for ischemic stroke and later found to have intracranial tumors or cerebral aneurysms. Considering the high volume of intravenous rtPA’s at our center and limited data that has been published so far, we hope to provide valuable data on this.

Methods:
We plan to look retrospectively into patients that received intravenous rtPA for acute ischemic strokes from January 2006 to March 2014 at our center, the list of which will be obtained from the stroke database (about 700 patients). We will review admission CT head, CTA/MRA head, cerebral angiograms if available, MRI brain and follow up CT head reports from EMR and identify a subset of patients with intracranial neoplasms, cerebral aneurysms and AVM’s from this cohort. We will obtain demographic information and NIHSS on admission for these patients. We will determine the number of intracranial hemorrhages in each subset and delineate those that are attributable to underlying neoplasms, aneurysms or AVM’s.

Expected results:
We believe our study will be the largest study on the safety of intravenous rtPA for ischemic strokes in patients with pre-existing intracranial neoplasms, cerebral aneurysms and AVM’s and will undoubtedly provide very valuable information. The results of our study would help in revision of treatment guidelines for acute ischemic stroke.

Ashkan Mowla, M.D. has no conflicts of interest related to this study and nothing to disclose. This is a non-sponsored study.

Dr. Singh has nothing to disclose nor any conflicts of interest that relate to this study.
“Clinical Diagnosis and Symptom Variability of Cerebrovascular Strokes”

Principle investigator: Noureldin Abdelhamid, M.D.
Sub-investigator and Mentor: Marilou Ching MD MPH FACP
Statistician: Katelyn Kavak M.S.
Others: Annemarie Crumlish, Sandhya Mehla, M.D.

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Dr. Abdelhamid attended his medical school in Cairo, Egypt. After graduation he did one year of transitional internship and commenced Neuropsychiatry residency training, but soon after decided to move to Toronto, Canada. In Toronto, Nour worked in the area of clinical research for novel drugs with multiple pharmaceutical companies. In addition, he joined the research team in the department of Psychiatry at the University of Toronto. He then moved to Buffalo where he completed his internship and is a current PGY3. Nour will be the co-chief resident for the next academic year. He is currently the active representative of all UB residents to the GME committee. Nour has special interest in the areas of vascular neurology and neuro-critical care. In 2015, he will start a vascular neurology fellowship at the University of Texas at Houston.

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Background and Introduction: As health care providers are accountable for their diagnosis and management, there is a huge increase in the number of MRIs ordered to rule out strokes, which indirectly increases health care cost. This increased number of MRIs ordered might also affect our medical training as residents given the emerging reliability on imaging rather than proper history taking and neurological exam.

Objectives and hypothesis:

We want to study the efficacy among neurology resident physicians in making or refuting the diagnosis of ischemic stroke by only relying on their clinical skills. The analysis of such data will be helpful from an educational point of view.

We also aim to test different stroke associations, i.e. what symptoms, signs, co-morbidities and risk factors tend to associate more or less with strokes? This will be done by comparing all chief complaints and any other symptoms, co-morbidities or risk factor to MRI results, aiming to find a trend.

Methods:

Neurology residents will be given access to online survey forms which will have a questionnaire about the presentation of the patient and preliminary clinical diagnosis made by the resident doctor prior to the MRI finding. They will fill out these survey forms for every patient if they plan to order a brain MRI for the purpose of ruling out stroke. All the data entered by the residents will be correlated with the MRI finding results.

Analysis and statistics:

- Chi-square analyses to determine how well the resident’s diagnosis of stroke overlaps with the diagnosis of stroke as confirmed by MRI. Subsequent sensitivity and specificity analysis will be performed.
- Additional chi-square tests with odds ratios will be performed for each variable (symptoms, co-morbidities etc.) to determine if strong association is present with stroke diagnosis confirmed by MRI.

Expected Results:

Neurology residents efficacy in diagnosing ischemic strokes with no MRI
Risk factor/symptom/sign/co-morbidities association with ischemic strokes

Confidentiality: Information related to the participants will be treated in strict confidence to the extent provided by the law.

Disclosure: None of the authors have anything to disclose related to this study.
Conflict of interest: No conflicts of interest exists for any of the authors on this paper related to this study.
IRB approval is pending.

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"Proposal for Research Project: Time Interval providing Highest Yield for Initial EEG in New Onset Seizures" - IRB approval is pending.

PI: Pooja Sofat, MBBS
Faculty Mentor: Ping Li, MD, MSc
Authors: Barbara Teeter, PhD, MPH; Katelyn S. Kavak, MS; Rajesh Gupta MBBS, MD, MS

Introduction: The timing providing the highest yield of initial EEG after new onset unprovoked seizures both in diagnosis and patient care is an important and practical issue. Current guidelines suggest routine EEGs are standard of care in the work-up of new onset unprovoked seizures. AAN 2007 practice parameter article quotes timeframe from 48 hours to an average of 15 days.

Hypothesis: EEG performed earlier will provide higher yield for epileptiform activity and affect course of patient care.

Objective: Goal is to determine a concrete timeframe in which to perform the initial EEG in patients with new onset unprovoked seizures and prove a greater yield of EEG benefits in managing clinical suspicion of epilepsy.

Methods. Retrospective chart review study of both pediatric and adult patients with new onset unprovoked seizures. Patients will be identified from EEG Database located at WCHOB using keyword "new onset or first seizure". 
Inclusion criteria: unprovoked event; age 1 year and above; new onset.
Exclusion criteria: provoked seizure; age <1; h/o stroke; known seizure history; on AED treatment; status epilepticus.
Evaluate EEG reports to determine presence or absence of epileptiform discharges. Correlation between the presence of epileptiform discharges and time to obtain EEG from seizure onset. Assess the factors potentially contributing to the prevalence of epileptiform discharges including continuous variables such as age, time (hours) from seizure onset to obtain EEG and total number of seizures occurring until EEG is obtained. Models will be carried to predict factors contributing to the positivity of EEG which is defined as the presence of epileptiform discharges. Significance will be set at p<0.05. Statistical analysis will be performed using SPSS.
Expected results: EEG’s performed earlier after new onset unprovoked seizures will show negative correlation between presence of epileptiform discharges and time (hours) from seizure onset to obtaining EEG, for both adults and children, showing statistical significance.

Neither Dr. Sofat nor any of her co-authors have any conflicts of interest or disclosures related to this study.